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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Taichi Majima

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EXAMINER

KASSA, ZEWDU A

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,615	Applicant(s) MAJIMA, TAICHI	
	Examiner ZEWDU KASSA	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to communication filled on 6/22/09.

Claims 1-12 are pending on this application.

2. Applicant's arguments with respect to claims 1-12 have been fully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1- 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kushita (US 5835508) in view of Choi (US 20020040460).**

5. As per claim 1, Kushita teaches a transmitting apparatus comprising: a data dividing part for dividing given data in a unit of bit (Kushita, Fig. 1 wherein data being divided in a unit of bit); a bit adding part that adds

Art Unit: 2611

predetermined bits to bits of main data according to quality of an environment of a communication path to produce hybrid bit data; and (Kushita, Col 2 L24-35, Col 1 L45-50) a data transmission characteristic measuring part for measuring a data transmission characteristic in a communication path (Kushita, Col 5 L65-67), wherein the bit adding part operates to acquire a value of the data transmission characteristic from the data transmission characteristic measuring part and to decide quality of an environment in the communication path on the basis of the level of the acquired value of the data transmission characteristic (Kushita, Col 5 L65-Col 6 L1-3); and a modulating part for performing modulation on the basis of the produced hybrid bit data to create and output a modulated signal (Kushita, Col 4 L39-40), wherein the bit adding part operates to add redundant bits to each of bits of the main data to produce the hybrid bit data when it is decided the data transmission characteristic measuring part that the environment of the communication path is defective ; and (Kushita, Col 6 L 11, Col 6 L18-21, Col 2 L24-35).

6. Kushita does not explicitly teach wherein the bit adding part operates to add bits of association data to each of bits of the main data instead of the redundant bits to produce the hybrid bit data when it is decided by the data

Art Unit: 2611

transmission characteristic measuring part that the environment of the communication path is non-defective, the association data being associated with the main data and obtained by utilizing additional information for expansion services. Choi teaches wherein the bit adding part (Choi, Fig. 1 item 110) operates to add bits of association data to each of bits of the main data instead of the redundant bits to produce the hybrid bit data when it is decided by the data transmission characteristic measuring part that the environment of the communication path is non-defective, the association data being associated with the main data and obtained by utilizing additional information for expansion services (Choi, Para [0038] "... redundancy required ... can be determined adaptively so that if channel conditions are good ... more of the source bits can be transmitted"). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to implement the instant limitation, as taught by Choi, in the apparatus of Kushita because Kushita teaches transmit a redundant bits only when the channel quality is defective and data transmission rate is controlled dynamically (Kushita, Col 2 L24-35, Col 1 L45-50, Col 9 L13-14) and Choi teaches the benefit of transmitting more information data instead of a redundant bit , when the channel quality is good, that will provide a more data rate or throughput (Choi, Para [0038] "... redundancy required ...

Art Unit: 2611

can be determined adaptively so that if channel conditions are good ... more of the source bits can be transmitted").

7. As per claim 2, Kushita in view of Choi teaches the transmitting apparatus according to claim 1, wherein the bit adding part operates to arrange symbols of the hybrid bit data such that a Euclidian distance of the hybrid bit data added with the redundant bits is extended (It is well known in the art - see US Col 1 L23-33 "Euclidian").

8. As per claim 3, Kushita in view of Choi the transmitting apparatus according to claim 1, wherein the bit adding part operates to add the redundant bits to the respective bits of the main data such that a gray code is produced (It is well known to use a gray code, where two successive values differ in only on bit, in error correction because it prevent ambiguity during detecting – see US 4901072 Col 1 L38-43).

9. As per claim 4, Kushita in view of Choi teaches the transmitting apparatus according to any one of claims 1 to 3, the data transmission characteristic measuring part comprising a received signal strength indicator measuring part that measures a received signal strength indicator of a data transmission destination (Kushita, Col 5 L65-67), wherein the bit

Art Unit: 2611

adding part operates to acquire the received signal strength indicator from the received signal strength indicator measuring part (Kushita, Col 2 L24-35, Col 1 L45-50) and decide quality of an environment of the communication path on the basis of a level of the received signal strength indicator acquired (Kushita, Col 3 L55-59 "channel quality signal indicative").

10. As per claim 5, Kushita in view of Choi teaches the transmitting apparatus according to any one of claims 1 to 3, wherein the bit adding part operates to acquire at least one piece of information among the received signal strength indicator measured by a data transmission destination, a vector error of a demodulated wave, and a bit error and decide quality of an environment of the communication path on the basis of the information acquired (Kushita, Col 4 L39-49 "... the destination decoder ... detects errors ... destination transmitting unit ... transmits the ... channel quality signal back to the source station ...").

11. As per claim 6, Kushita in view of Choi teaches the transmitting apparatus according to any one of claims 1 to 3, wherein the modulating part performs modulation in accordance with a multi-value FSK system (Kushita, Col 5 L54-55 "modulation" –it is well known in the art to perform

Art Unit: 2611

"multi-value FSK system" –see US 5818875 Section "DESCRIPTION OF THE RELATED ART").

12. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kushita (US 5835508) in view of Todoroki (US 5457705) and Choi (US 20020040460).

13. As per claim 7, Kushita teaches a receiving apparatus (Kushita, Fig. 2 item 31) that receives a signal produced on the basis of hybrid bit data obtained by adding predetermined bits to respective bits of main data, (Kushita, Fig. 1 wherein a hybrid data is communicated between transmitter and receiver), the apparatus comprising: a demodulating part that demodulates the signal received (Kushita, Col 3 L42 "demodulating"); a symbol deciding part that applies, at every Nyquist interval, symbol decision to the signal demodulated by the demodulating part to produce a symbol value (Kushita, Col 3 L44-44, Col 8 L5-10); a bit converting part that converts the symbol value produced by the symbol deciding part into a bit value (Kushita, Col 3 L44-44, Col 8 L5-10); and a data recovering part that combines respective bits of the main data to recover original main data from the bit value converted by the bit converting part, combines bit data

Art Unit: 2611

added to the respective bits of the main data to form combined data, decides validity of the combined data formed (Kushita, Col 1 L37-40).

14. Kushita does not explicitly teach recovers data decided as valid as additional data, deletes the added bits when it is decided that the combined data is invalid, and combines the bit data from which the added predetermined bits are deleted to recovery original data. Todoroki teaches recovers data decided as valid as additional data, deletes the added bits when it is decided that the combined data is invalid, and combines the bit data from which the added predetermined bits are deleted to recovery original data (Todoroki, Col 7 L10-14). Thus, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to implement the instant limitation as taught by Todoroki, in the apparatus of Kushita, because Kushita teaches how to recover a combined data of a redundant bits and main data in general and Todoroki teaches the benefit of adding additional information bit on main data instead of redundant data and on receiving side a method of determining a valid additional data or redundant data, that provide an improved communication system with information rate increased (Todoroki, Col 1 L15, Col 7 L10-14).

Art Unit: 2611

15. Kushita does not explicitly teach the predetermined bits including redundant bits and bit of data associated with the main data. Choi teaches the predetermined bits including redundant bits and bit of data associated with the main data (Choi, Para [0038] "... redundancy required ... can be determined adaptively so that if channel conditions are good ... more of the source bits can be transmitted"). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to implement the instant limitation, as taught by Choi, in the apparatus of Kushita because Kushita teaches transmit a redundant bits only when the channel quality is defective and data transmission rate is controlled dynamically (Kushita, Col 2 L24-35, Col 1 L45-50, Col 9 L13-14) and Choi teaches the benefit of transmitting more information data instead of a redundant bit , when the channel quality is good, that will provide a more data rate or throughput (Choi, Para [0038] "... redundancy required ... can be determined adaptively so that if channel conditions are good ... more of the source bits can be transmitted").

16. As per claim 8, Kushita in view of Todoroki and Choi teaches the receiving apparatus according to claim 7 (see claim 7), wherein the data recovering part operates to decide validity of the combined data formed by combining the added bit data in accordance with a cyclic redundancy check

Art Unit: 2611

(Choi, Para [0030], Further more it is well known to use CRC see US 20030167425).

17. “In re claim 9, Kushita in view of Choi discloses a data transmitting method because under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claims, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. In re King, 801 F.2d 1324,231 MPEP 2112.02”

18. “In re claim 10, Kushita in view of Todoroki and Choi discloses a data receiving method because under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claims, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. In re King, 801 F.2d 1324,231 MPEP 2112.02”

19. As per claim 11, similarly analyzed as claim 1.

20. As per claim 12, similarly analyzed as claim 7.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZEWDU KASSA whose telephone number is (571)270-5253. The examiner can normally be reached on Monday - Friday (7:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571 272 3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

zk

/David C. Payne/

Supervisory Patent Examiner, Art Unit 2611